State of California AIR RESOURCES BOARD

EXECUTIVE ORDER A-21-207

Relating to Certification of New Heavy-Duty Engines and Vehicles

CUMMINS ENGINE COMPANY, INC.

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following 1998 model-year Cummins Engine Company, Inc. diesel-cycle engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Fuel Type: Diesel

Engine Family		isplacement Cubic Inches)	Exhaust Emission Control Systems and Special Features
WCEXH0855NAA (093A1)	14.0	(855)	Turbocharger Charge Air Cooler Powertrain Control Module

Engine models and codes are listed on attachments.

The following are the certification exhaust emission standards for this engine family in grams per brake horsepower-hour:

Total	Carbon	Nitrogen	<u>Particulates</u>
<u>Hydrocarbons</u>	<u>Monoxide</u>	Oxides	
1.3	15.5	4.0	0.10

The following are the certification exhaust emission values for this engine family in grams per brake horsepower-hour:

Total	Carbon	Nitrogen	<u>Particulates</u>
<u>Hydrocarbons</u>	<u>Monoxide</u>	Oxides	
0.4	1.0	3.8	0.09

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

- 1. Any engine which employs a defeat device shall not be covered by this Executive Order.
- 2. Within 90 days following the issuance of this Executive Order, the manufacturer must show cause, to the satisfaction of the Executive Officer or his designee, that the strategy for fuel injection timing, including timing during the fuel economy mode, is not a defeat device.

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 26 day of February 1998.

R. B. Summerfield, Chief

Mobile Source Operations Division

LARGE ENGINE MODEL SUMMARY

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Manufacturer: Cummins Engine Company, Inc.

Process Code: New Submission

Manufacturer Family Name:

EPA Engine Family: WCEXH0855NAA

093A1

N14-525E+ 525@1800 288 175.1 1850@1200 332 134.4 PCM, PCM, N14-525E+ N14-525E+ 525@1800 288 175.1 1850@1200 280 113.2 PCM, N14-525E+ N14-525E+ 525@1800 288 175.1 1590@1200 280 113.2 PCM, N14-50E+ N14-500E+ 505@1800 272 165.3 1750@1200 312 126.2 PCM, N14-50DE+ N14-500E+ 505@1800 272 165.3 1750@1200 294 126.2 PCM, N14-50DE+ N14-500E+ 505@1800 277 165.3 1650@1200 294 126.2 PCM, N14-460E+ N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM, N14-460E+ N14-460E+ 480@1800 255 154.9 1650@1200 284 126.2 PCM, N14-460E+ N14-460E+ 480@1800 255 154.9 1650@1200 284 126.2 PCM, N14-460E+ N14-460E+ 480@1800	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mr/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroks@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
34 N14.525E+ \$25@1800 288 175.1 1850@1200 332 134.4 PCM 38 N14.525E+ \$25@1800 288 175.1 1850@1200 280 174.4 PCM 38 N14.525E+ \$25@1800 288 175.1 1590@1200 280 113.2 PCM 31 N14.500E+ \$05@1800 272 165.3 1750@1200 312 126.2 PCM 30 N14.500E+ \$05@1800 272 165.3 1750@1200 312 126.2 PCM 30 N14.500E+ \$05@1800 272 165.3 1750@1200 294 126.2 PCM 30 N14.500E+ \$05@1800 277 168.2 1650@1200 294 126.2 PCM 30 N14.460E+ \$400@1800 255 154.9 1650@1200 294 126.2 PCM 31 N14.460E+ \$400@1800 255 154.9 1650@1200 294 126.2 PCM	CPI 2391								
N14.525E+ 525@1800 288 175.1 1850@1200 280 134.4 PCM N14.525E+ 525@1800 288 175.1 1590@1200 280 113.2 PCM N14.525E+ 525@1800 288 175.1 1590@1200 280 113.2 PCM N14.500E+ 505@1800 272 165.3 1750@1200 294 126.2 PCM N14.500E+ 505@1800 272 165.3 1650@1200 294 126.2 PCM N14.500E+ 505@1800 277 165.3 1650@1200 294 126.2 PCM N14.500E+ 505@1800 277 166.3 1650@1200 294 126.2 PCM N14.450E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14.450E+ 480@1800 255 154.9 1650@1200 276 111.7 PCM N14.435E-BP+ 480@1800 225 154.9 1560@1200 276 111	FR10134	N14-525E+	525@1800	288	175.1	1850@1200	332	134.4	PCM, TC, CAC
N14-626E+ 525@1800 288 175.1 1590@1200 280 113.2 PCM N14-626E+ 525@1800 288 175.1 1590@1200 280 113.2 PCM N14-620E+ 506@1800 272 165.3 1750@1200 312 126.2 PCM N14-500E+ 506@1800 272 165.3 1750@1200 312 126.2 PCM N14-500E+ 505@1800 272 165.3 1650@1200 294 126.2 PCM N14-500E+ 505@1800 277 165.3 1650@1200 294 126.2 PCM N14-500E+ 505@1800 277 165.3 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1560@1200 294 126.2<	FR10133	N14-525E+	525@1800	288	175.1	1850@1200	332	134.4	PCM, TC, CAC
N14-525E+ 525@1800 288 175.1 1590@1200 280 113.2 PCM N14-500E+ 505@1800 272 165.3 1750@1200 312 126.2 PCM N14-500E+ 505@1800 272 165.3 1750@1200 312 126.2 PCM N14-500E+ 505@1800 277 165.3 1650@1200 294 126.2 PCM N14-500E+ 505@1800 277 168.2 1650@1200 294 126.2 PCM N14-500E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-435 ESP+ 435@1800 229 138.8 1550@1200 276 111	FR10132	N14-525E+	525@1800	288	175.1	1590@1200	280	113.2	PCM, TC, CAC
N14-500E+ 505@1800 272 165.3 1750@1200 312 126.2 PCM N14-500E+ 505@1800 272 165.3 1750@1200 312 126.2 PCM N14-500E+ 505@1800 272 165.3 1650@1200 294 126.2 PCM N14-500E+ 505@1800 272 165.3 1650@1200 294 126.2 PCM N14-460E+ 480@1800 277 168.2 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 276 111.7 PCM N14-435 ESP+ 435@1800 229 138.8 1550@1200 276 111.7 PCM N14-435 ESP+ 435@1800 229 138.8 1550@1200 276	FR10140	N14-525E+	525@1800	288	175.1	1590@1200	280	113.2	PCM, TC, CAC
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N14-500E+ 505@1800 272 165.3 1650@1200 294 126.2 PCM N14-500E+ 505@1800 277 165.3 165.0 165.0 294 126.2 PCM N14-500E+ 511@1800 277 168.2 165.0 165.0 294 126.2 PCM N14-60E+ 480@1800 255 154.9 1650@1200 294 126.2 PCM N14-460E+ 480@1800 255 154.9 1650@1200 276 111.7 PCM N14-460E+ 480@1800 255 154.9 1550@1200 276 111.7 PCM N14-430E+ 480@1800 229 138.8 1550@1200 276 111.7 PCM N14-435E-SP+ 435@1800 229 138.8 1550@1200 276 111.7 PCM N14-435E+ 456@1800 237 143.8 1550@1200 276 111.7 PCM N14-435E+ 456@1800 237 143.8 1550@1200	FR10130	N14-500E+	505@1800	272	165.3	1750@1200	312	126.2	PCM, TC, CAC
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N14-435 ESP+ 435@1800 229 138.8 1550@1200 276 111.7 PCM N14-435 ESP+ 435@1800 229 138.8 1550@1200 276 .111.7 PCM N14-435 E+ 450@1800 237 143.8 1650@1200 294 126.2 PCM N14-435 E+ 450@1800 237 143.8 1650@1200 276 111.7 PCM N14-435 E+ 450@1800 237 143.8 1550@1200 276 111.7 PCM N14-435 E+ 435@1800 229 138.8 1550@1200 276 111.7 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM	FR10123	N14-435 ESP+	435@1800	229	138.8	1550@1200	276	111.7	PCM, TC, CAC
N14-435 ESP+ 435@1800 229 138.8 1550@1200 276 .111.7 PCM N14-435 E+ 450@1800 237 143.8 1650@1200 294 126.2 PCM N14-435 E+ 450@1800 237 143.8 1550@1200 276 111.7 PCM N14-435 E+ 450@1800 237 143.8 1550@1200 276 111.7 PCM N14-435 E+ 435@1800 229 138.8 1550@1200 276 111.7 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM N14-435 E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM	FR10122	N14-435 ESP+	435@1800	229	138.8	1550@1200	276	111.7	PCM, TC, CAC
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N14-435E+ 450@1800 237 143.8 1550@1200 276 111.7 PCM N14-435E+ 435@1800 229 138.8 1550@1200 276 111.7 PCM N14-435E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM N14-435E+ 448@1800 236 143.3 1450@1200 258 104.5 PCM	FR10137	N14-435E+	450@1800	237	143.8	1550@1200	276	111.7	PCM, TC, CAC
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N14-435E+ 448@1800 236 143.3 1450@1200 258 104.5 F	FR10116	N14-435E+	448@1800	236	143.3	1450@1200	258	104.5	ည်
138 8 1450@1200 258 104.5 F	ER10115	N14-435E+	448@1800	236	143.3	1450@1200	258	104.5	PCM, TC, CAC
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